



Electrical Aerospace Ground Equipment (EAGE)

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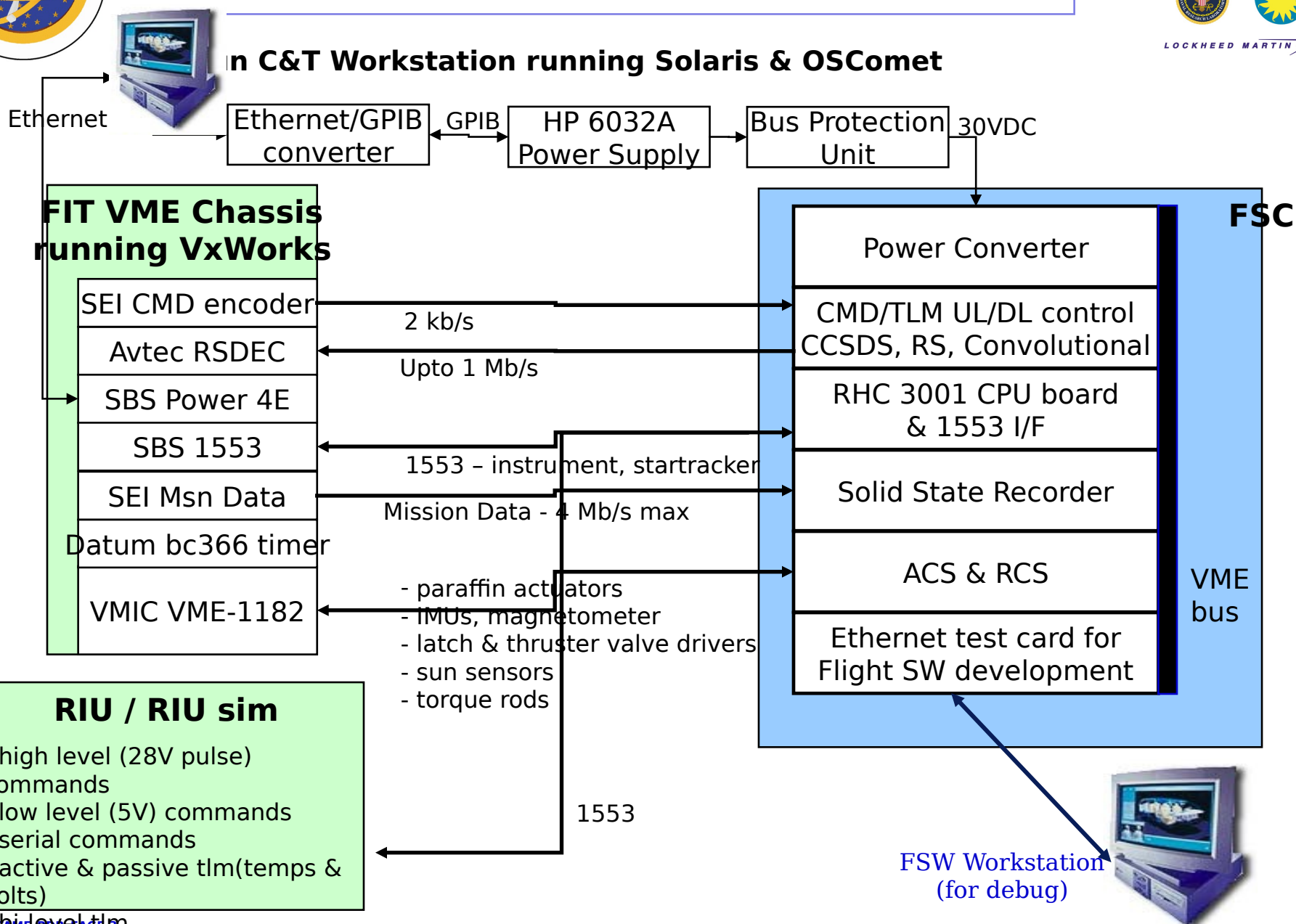
Requirements from MRD



- **Protect flight hardware during test**
- **Provide CCSDS uplink to spacecraft**
- **Accept downlink to spacecraft**
- **Provide 28+/-4 VDC power to spacecraft for system level testing and pre-launch activities**
- **Simulate/provide 600W at 28 VDC solar array/battery power**
- **Provide spacecraft critical bus/component protection from EAGE overvoltage and/or overcurrent anomalies.**



In C&T Workstation running Solaris & OSComet





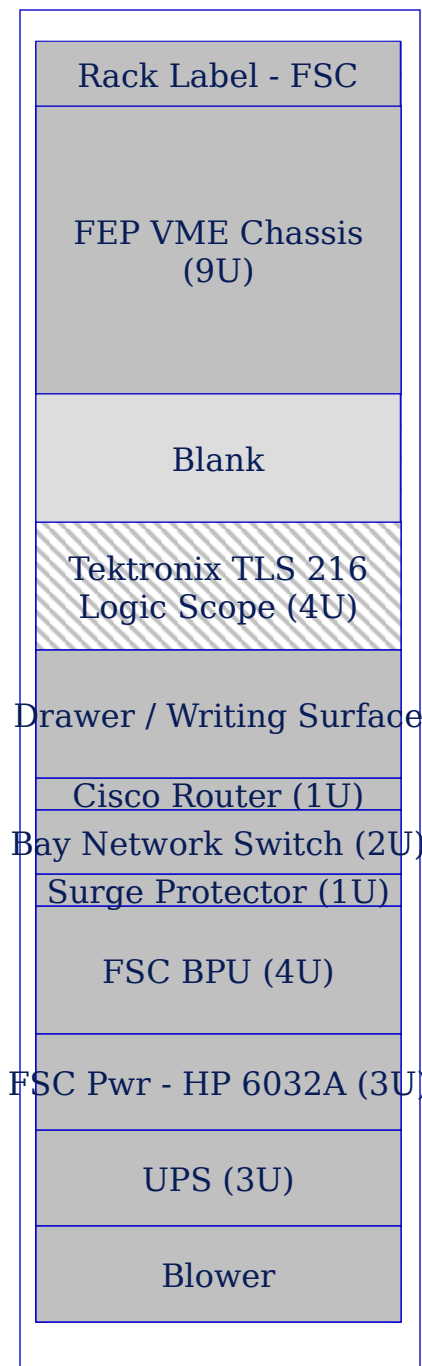
FAME FTB Rack

Rev A 2001/08/13

Note: 1U = 1.75" = 44.45mm

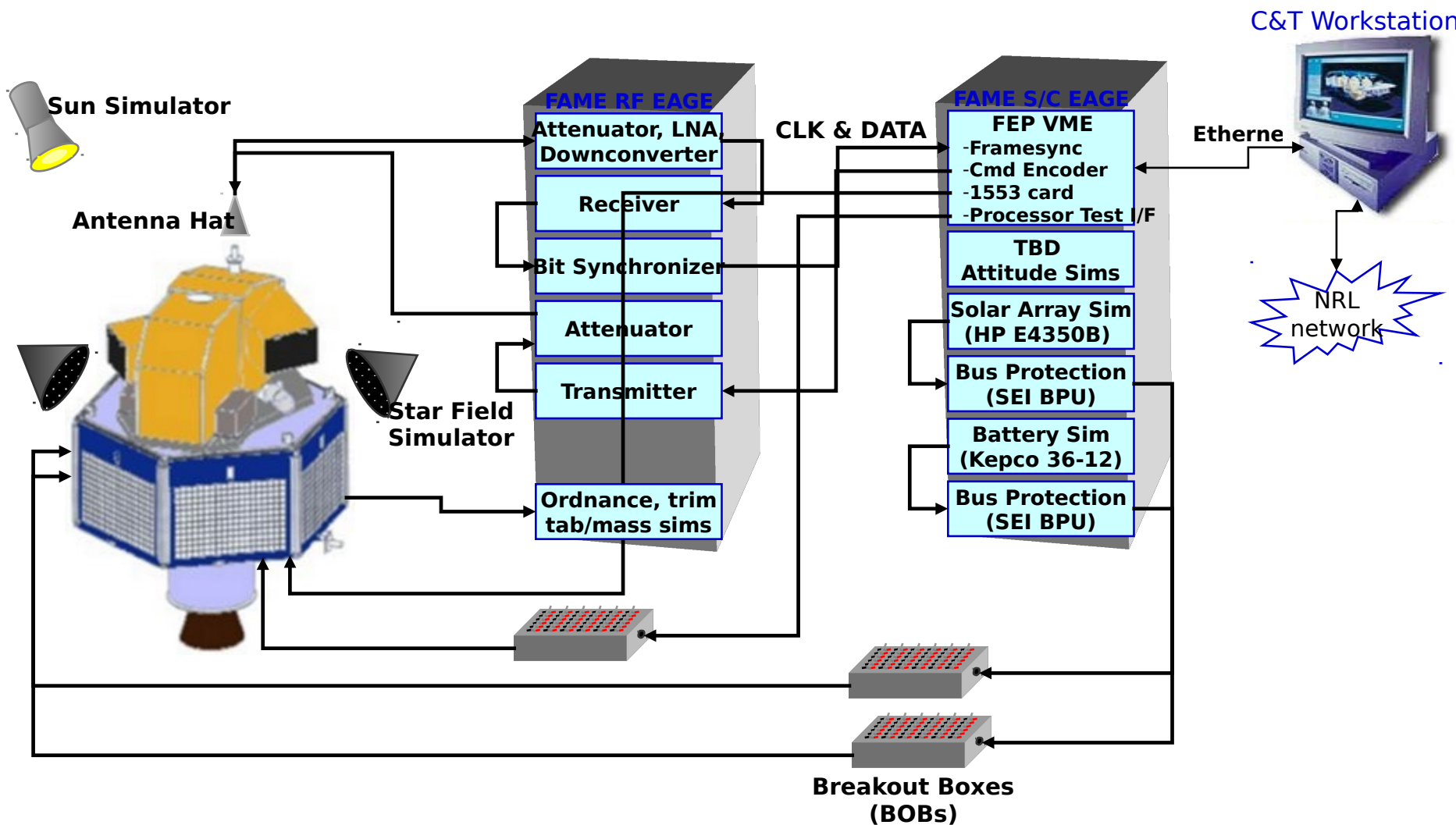
Additional equipment:

Sun Workstation,
monitor





S/C EAGE



* Most testing scenarios do not use antennas



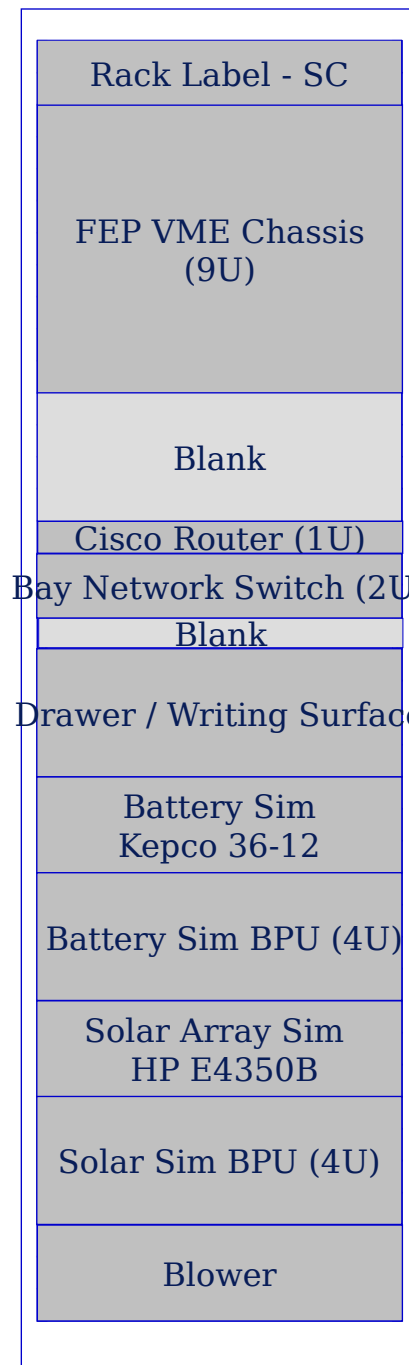
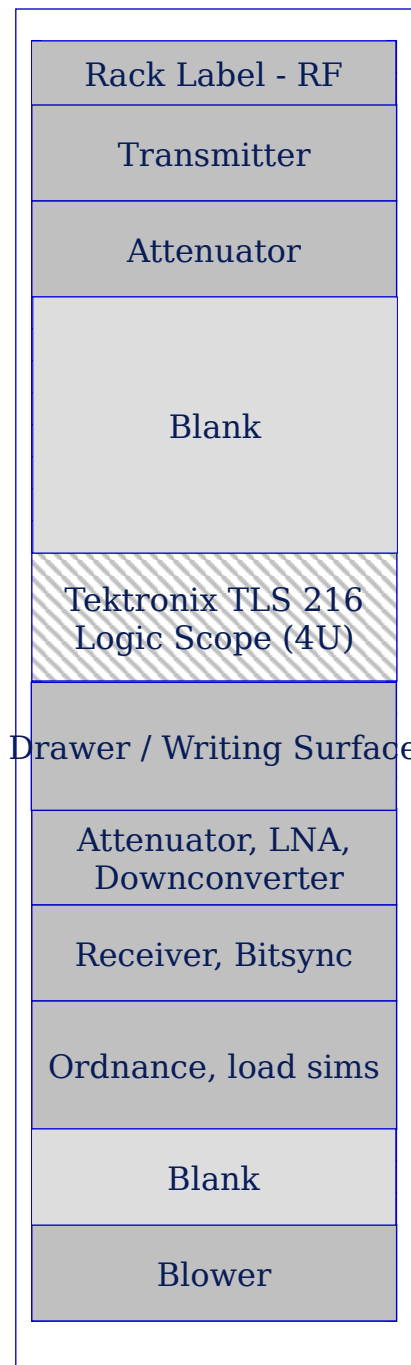
FAME EAGE Racks

Rev B 2001/08/13

Note: 1U = 1.75" = 44.45mm

Additional equipment:

Sun Workstation,
monitor





Issues



- **ICM/Windsat/NEMO EAGE reuse to reduce costs?**
- **Delivering FTB on time may requiring “borrowing” instead of purchasing equipment**
- **Need to tap GPS antenna output in A59**



Procurement Status - FTB



FSC Testbed (FTB) - delivery date 2001/09

Item	Supplier	Serial/Part #	Status	Delivery Date	Unit Price
Sparc Ultra 2 CPU	Sun	003H2BC8	in T970	6/01	Available
Sun monitor	Sun	0010968-516	in T970	6/01	Available
8mm Tape drive	Sun	004C0276	in T970	6/01	Available
3Com Switch 3300	3Com		in T970	6/01	\$1,500
Best Power Fortress	Best	1425UG01014	in T970	6/01	Available
GPS time display	TrueTime	99234644	in T970	6/01	Available
Nat'l Inst GPIB-Enet	Natl Inst	B8D617	in T970	6/01	Available
VME chassis	-		in T970	6/01	Available
SEI VCEU	Silver			8/01	15000 est
Avtec RSDEC	Avtec		in T970	6/01	Available
SBS Power 4E	SBS		in T970	6/01	Available
SBS 1553	SBS		in T970	6/01	Available
SEI Mission Data sim	Silver			9/01	15000 est
Datum Timer bc366	Datum		in T970	6/01	Available
SEI IMU, sun sensors	Silver			9/01	15000 est
VMIC ACS I/F card	VMIC	VMIVME-1182			1000 est
Gimi ACS box				9/01	
HP 6032A Pwr	HP	US38322386	in T970	6/01	Available
SEI BPU	Silver			6/01	8000 est
I/O panel FTB					1000 est
SBS or Avtec bitsync					8000 est

Red indicates an item is not yet in house



Procurement Status - STB



Software Testbed (STB) - delivery date 2001/10

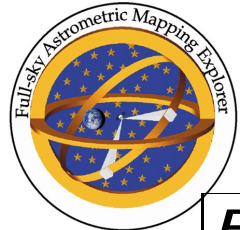
Item	Supplier	Serial/Part #	Status	Delivery Date	Unit Price
Sparc Ultra 2 CPU	Sun	003H29AC	in T970	6/01	Available
Sun monitor	Sun	0010968-518	in T970	6/01	Available
3Com Switch 3300	3Com			6/01	\$1,500
Best Power Fortress	Best	1425UG01013	in T970	6/01	Available
GPS time display	TrueTime			6/01	
Nat'l Inst GPIB-Enet	Natl Inst	AD5DE0	in T970	6/01	Available
VME chassis	-		in T970	6/01	Available
SEI VCEU	Silver			8/01	15000 est
Avtec RSDEC	Avtec		in T970	6/01	Available
SBS Power 7E	SBS		in T970	6/01	Available
SBS 1553	SBS		in T970	6/01	Available
SEI Mission Data sim	Silver			8/01	15000 est
Datum Timer bc366	Datum		in T970	6/01	Available
SEI IMU, sun sensors	Silver				15000 est
VMIC ACS I/F card	VMIC	VMIVME-1182			1000 est
Gini ACS box					
HP 6032A Pwr	HP	US38322380	in T970	6/01	Available
SEI BPU	Silver			6/01	8000 est
I/O panel STB	-				1000 est



Procurement Status - EAGE



<i>EAGE - delivery date 2002/06</i>					
<i>Item</i>	<i>Supplier</i>	<i>Serial/Part #</i>	<i>Status</i>	<i>Delivery Date</i>	<i>Unit Price</i>
Sun Ultra 2 - EAGE	Sun				
Sun monitor	Sun				
3Com Switch 3300	3Com			6/02	\$1,500
Best Power Fortress	Best			6/02	
GPS time display	TrueTime			6/02	
Nat'l Inst GPIB-Enet	Natl Inst			6/02	
VME chassis	-		in T970	6/01	Available
SEI VCEU	Silver			6/02	15000 est
Avtec RSDEC	Avtec		in T970	6/01	Available
SBS Power 7E	SBS		in T970	6/01	Available
SBS 1553	SBS			6/02	
SEI Mission Data sim	Silver			6/02	
Datum Timer bc366	Datum		in T970	6/01	Available
SEI IMU, sun sensors	Silver				
VMIC ACS I/F card	VMIC	VMIVME-1182			
Gimi ACS box					
HP 6032A Pwr	HP		in T970	6/01	Available
SEI BPU	Silver			6/02	
I/O panel EAGE				6/02	
HP 6032A Pwr				6/02	
SEI BPU				6/02	
APC UPS 3000RM			in T970	6/01	Available
Battery Sim			in T970	6/01	Available
Solar Array Sim			in T970	6/01	Available
GD rack slides	Newark	C-230-S-124			
GD rack brackets	Newark	CLB-307			
Battery Sim					
Solar Array Sim					
BPU					
UPS					



Procurement Status - ELSE



<i>ELSE - delivery date 2004/01</i>					
Item	Supplier	Part #	Status	Delivery Date	Unit Price
Sun Ultra 2 - EAGE	Sun				
Sun monitor	Sun				
8mm Tape drive	Sun			6/01	
3Com Switch 3300	3Com			6/01	
Best Power Fortress	Best			6/01	
GPS time display	TrueTime			6/01	
Nat'l Inst GPIB-Enet	Nat'l Inst			6/01	
VME chassis	-			6/01	
SEI VCEU	Silver			7/01	\$15,000
Avtec RSDEC	Avtect		in T970	6/01	Available
SBS Power 7E	SBS			6/01	
Datum Timer bc366	Datun			6/01	
HP 6032A Pwr				6/01	
SEI BPU	Silver			6/01	
I/O panel EAGE					
HP 6032A Pwr			in T970	6/01	Available
SEI BPU			in T970	6/01	Available
APC UPS 3000RM			in T970	6/01	Available
Battery Sim			in T970	6/01	Available
Solar Array Sim			in T970	6/01	Available
GD rack slides	Newark	C-230-S-124			
GD rack brackets	Newark	CLB-307			
Battery Sim					
Solar Array Sim					
BPU					
UPS					
Rackmount monitor			in T970	6/01	Available
~20U shipping rack			in T970	6/01	Available
~10U shipping rack			in T970	6/01	Available



Schedule Summary



- **FAME PDR** **Oct 2001**
- **EAGE Design Review** **Sep 2001**
- **Initial FEP Complete** **Sep 2001**
- **FEP supports FSC box testing** **Sep 2001**
- **Space Ground ICD available** **Oct 2001**
- **EAGE system demonstration (ATP)** **Dec 2001**
- **FAME CDR** **Jun 2002**
- **EAGE System available for test** **Apr 2002**